

On the impossibility of miracles as
‘violations of the laws of nature’:
the System approach



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David Hume defined a miracle as 'a violation of the laws of nature' and as 'a transgression of the law of nature by a particular volition of the Deity'. A miraculous event, defined in this way, requires an interaction between two systems: the supernatural and the physical. I will argue that this interaction takes place in two ways: either Top-Down (TD), where the physical system retains its pure physicality and God causally influences the physical system only after It acquires physical properties; or Bottom-Up (BU), where the physical system is no longer a purely physical system but acquires supernatural properties and becomes part of a wider system (i.e. the System), and can therefore be directly influenced by God. I will give reasons why, in both approaches, the scope of laws of nature needs to be widened in order to redefine laws of nature as laws of the System, a system which encompasses all possible systems which can co-interact in it. Further, I will demonstrate that every law of the System includes a common course of nature clause, which refers to a regularity taken to be a law of nature, and a ceteris paribus clause, which refers to exceptions to the common course of nature. These exceptions, which have been characterized by Swinburne and Smart as non-repeatable counter-instances to the laws of nature, have been used as an argument for miracles. However, including the exceptions to the law itself under the wider law of the System makes any reference to a violation of the law redundant. In addition, I will argue that the failure of some theorists, such as Aquinas and Larmer, to distinguish between what nature would not and could not do when left to its own devices has the consequence of reaching the absurd conclusion that events which are contrary to the common course of nature are miracles. Treating the supernatural and the physical system as one system, and redefining laws of nature as laws of the System, I will explain how the , supernatural and the physical systems, co-interact through the TD and BU approaches to show that, under the System, a violation of a law is impossible.

Introduction

On Section X, 'On Miracles', of *An enquiry concerning human understanding*, David Hume (2008) defined a miracle as 'a violation of the laws of nature' (p. 83) and as 'a transgression of the law of nature by a particular volition of the Deity' (p. 127). These definitions gave rise to a long epistemological debate surrounding the concept and possibility of miracles but only a few have attempted to combine the epistemological side of the issue with a metaphysical perspective. This is the gap I wish to fill with my approach to the problem. Prior to discussing the metaphysical aspect of the debate, I will first deal with the epistemological aspect of it, something that will allow me to apply certain of the epistemological positions to my metaphysical approach. Before

proceeding, I deem necessary to note that I am not arguing that a causal interaction between the supernatural and the physical systems can, as a matter of fact, take place, but I am only assuming it in order to examine whether, under such an interaction, a violation of the laws of nature is possible.

To begin, I argue that the notion of a violation of the laws of nature is self-contradictory. A counter-instance to a law of nature will either lead us to revise what we thought to be a law of nature, therefore expanding the law to include the counter-instance, or the counter-instance will show that the law did not, in fact, obtain (Flew, 1967), therefore showing that there was no law to be violated in the first place (McDermid, 2008). It is counterintuitive, I argue, to treat a law as a generalized description of how things do operate and act in nature and assert that there has been an actual event which violated the law in question. As McKinnon (1967) argues, ‘one cannot maintain both the reality of an event and the adequacy of the conception of nature with which it is in conflict’ (p. 312). Further, it would be a fallacy to suggest that a failure to spot the exact circumstances under which an alleged violation of a law of nature happens would mean that the ‘miraculous’ event is an act of God. Instead, one must suspend judgment in the observance of an event which goes against our formulated laws of nature until the alleged miracle is given an explanation, even one that is not attributed to the physical system. It is then contradictory, as both Flew and McKinnon have argued, to have a law of nature and its alleged violation both standing. If we allow that a miracle is an event which overrides natural law and originates from outside of nature, then we must, *per impossibile*, accept that we have both a law and its exception (Flew, 1967).

Miracles as non-repeatable counter-instances to the laws of nature

Some have argued that it is possible to have a valid law of nature and its counter-instance both standing and, they argue, this explains the occurrence of miracles. More specifically,

Swinburne (2014) and Smart (1964) have argued that miracles are 'non-repeatable counter-instances' to the laws of nature. More specifically, Swinburne has defined a non-repeatable counter-instance as 'the occurrence of an event that is impossible, given the operation of the actual laws of nature' (p. 277). However, Swinburne treats laws of nature as strict generalizations which cannot change given new data or new observations. As pointed out above, the occurrence of an event that goes against the actual laws of nature will only serve as to show that those were, in fact, not actual laws of nature and that they need to be revised to accommodate the observed event. The revised laws of nature will, then, make the occurrence of the event that was thought of as a miracle possible under physical terms.

In fact, a law of nature, besides including statistical generalizations and regularities (Larmer, 2011), also includes rare and non-repeatable events (Everitt, 1987) for they also fall under the law. Laws of nature do not describe how things ought to behave but describe how things do behave, that is, they do not restrict, *a priori*, how objects behave but are formed through observations of the behaviour of objects (Corner, 2007). However, this is not a view that Swinburne and Smart adopt. Their conception of repeatability and predictability gives rise to their argument that non-repeatable counter-instances to laws of nature are miracles but, as I will further demonstrate, non-repeatable counter-instances can be included in the law itself. Swinburne and Smart restrict the definition of a law of nature to a regularity and, consequently, ignore events which, despite falling outside that regularity, are law-like events.

According to Swinburne (1970), a law of nature describes what happens in a regular and predictable way. Swinburne assumes that, as a violation of a natural law is non-repeatable, it is also non-predictable. But Swinburne is mistaken for two reasons. First, we might be able to identify the circumstances under which an event took place, but it is the case that these circumstances might never obtain again in the future. In nature, not all variables are controllable, predictable, or even identifiable. Therefore, we might never

be able to determine whether an event can be reproduced and, thus, we cannot deduce that an event is a violation of a law of nature simply from the fact that it is non-repeatable. Second, as Corner (2007) argues, there are no empirical means available to identify an event as non-repeatable. We are not in a position to know whether a certain event will be repeated in the future or if it happened in the past. Determining whether the event is repeatable or not is of trivial importance as, contrary to what Swinburne and Smart (1964) suggest, a non-repeatable counter-instance would not serve as an exception to the law of nature but would have to be part of the law for it describes the circumstances under which the non-repeatable event in question took place.

Moreover, Swinburne's (1970) and Smart's (1964) assertions that a non-repeatable counter-instance does not constitute a violation of a law of nature are logically contradictory (Everitt, 1987; Corner, 2007). What Swinburne and Smart suggest is that the occurrence of an event in which an A is not a B would not violate the law 'All As are Bs'. This cannot, however, be the case as we cannot have the law and its exception both standing. Whether an alleged exception is repeatable or not does not provide sufficient reasons as to why one should consider an event as a violation of a law of nature. An important distinction Blackman (1978) makes helps clarify this point. Blackman expands on Hume's point that laws of nature are expressed by universal quantifiers and further says that, in contrast to laws of nature, historical events are particulars which are expressed by singular propositions. Thus, Blackman argues, any historical event is, by its nature, non-repeatable. Although Blackman focuses on historical events, as Hume does, I would not expand his proposition to all events taking place in the natural world. This is because, if we are aware of the circumstances under which an event took place under a law of nature, we should be able to reproduce it by recreating those circumstances. A law of nature contains repeatable events, but it is also the case, contrary to what Swinburne and Smart argue, that it may also contain non-repeatable events. What is the case if we are unable to reproduce an event after identifying all the circumstances under which it

took place is that there are some unknown natural forces at work which we have yet to identify (Collier, 1986).

Common course of nature and *ceteris paribus* clauses

Further, I argue that non-repeatable counter-instances should be included in the laws of nature and this gives rise to the reformulation of laws of nature that I wish to make. More specifically, in order to take into account Swinburne's (1970) and Smart's (1964) objections and allow non-repeatable counter-instances, and also rare and unusual events which Basinger (1986) considered as miracles, to be included in the laws of nature, I suggest that a different view should be taken on laws of nature. Instead of supposing that laws of nature, for example, have the form 'All As are Bs', they should be reformulated, instead, as 'All As are Bs *unless* under such and such circumstances an A is not a B'. Therefore, an A which is not a B, regardless of whether it is a non-repeatable counter-instance, does not violate the law of nature for the circumstances under which the counter-instance happens are included in the law itself (Everitt, 1987). Contrary to what Swinburne and Smart argue, then, these events are not counter-instances to laws of nature but counter-instances to the common course of nature.

In this way, as Everitt (1987) points out, the law of nature allows for an exception not to the law of nature itself, but to the generalization that it expresses. The generalization, I argue, is expressed with the term 'common course of nature', that is, the course that nature takes when it's left to its own devices (Flew, 1964). The term 'common course of nature' should not be equated with 'laws of nature', and events which are unlikely under the common course of nature should not be confused with events which are impossible just because they contradict a law of nature. Hume (2008) argued that 'nothing is esteemed a miracle if it ever happen in the common course of nature (p. 83). However, I argue that even events which take place outside the common course of nature cannot be considered miracles. Events which are counter-instances to the common course of nature

are very unlikely, given normal conditions (McDermid, 2008), but they never fail to be law-abiding.

In order to make this case clearer and elaborate on the above points, I will take as a law of nature the fact that ‘humans cannot walk on water’. This is formulated by our observations and experience, but also from our scientific knowledge of the density of the human body and water and the interaction that these two physical bodies have. However, as Corner (2007) suggests, it is at least logically possible that one can observe a case in which a human being walks on water. Under such an observation, we should identify the circumstances under which this event took place, for example that force *F* acted on that occasion. Irrespective of whether this event is repeatable or not, the law of nature ‘humans cannot walk on water’ needs to be reformulated as ‘humans cannot walk on water unless force *F* acts in such and such a way so that a human walks on water’. In this way, no violation of the law has taken place as the event is identified as a counter-instance to the common course of nature, and not as a counter-instance to a law of nature. An event which happens in nature must, by definition, be subsumable under the laws which apply in nature. As Spinoza (1951) pointed out, ‘nothing happens in nature which is in contradiction to its universal laws’ (p. 84).

Such exceptions to the common course of nature, I argue, take the form of *ceteris paribus* clauses which are included in every law (Ahern, 1977), and which follow the word ‘unless’ in laws of nature. ‘This clause’, according to Pritchard (2011), ‘is not designed specifically with supernatural intervention in mind but with the more general idea of any intervening force which may prevent the operation of some law’ (p. 44). Thus, as Everitt (1987) and Ahern suggest, laws of nature need to be reformulated to include the common course of nature, what was previously regarded as a law of nature, and counter-instances to the common course of nature, what was previously regarded as an exception to the law of nature. As McKinnon (1967) more explicitly argues, the expression ‘natural law’ must be substituted for the expression ‘the actual course of events’. In this way, McKinnon stated,

a miracle is defined as ‘an event involving the suspension of the actual course of events’ (p. 309), an event which is impossible as an actual event cannot, by definition, take place contrary to the actual course of events. Therefore, in the law of the System ‘humans cannot walk on water unless force F acts in such and such a way so that a human walks on water’, ‘humans cannot walk on water’ acts as the common course of nature clause while ‘unless force F acts in such and such a way so that a human walks on water’ acts as the *ceteris paribus* clause.

As the common course of nature and counter-instances to the common course of nature are both included in the law, a certain event can shift between being part of the common course of nature or the *ceteris paribus* clause without that affecting the applicability of the law. As Robinson (1967) notes, ‘if water were to start turning into wine fairly regularly this would soon cease to be considered a miracle. It would just be the way things are, a natural fact about water and wine’ (p. 158). Thus, contrary to Swinburne’s (1970) and Smart’s (1964) thesis, it is impossible, in principle, for a counter-instance to a law of nature (i.e. a miracle) to occur, as every event in the physical system is included in the law to which it applies. The introduction of *ceteris paribus* clauses is also a reply to Swinburne’s claim that laws of nature refer to natural generalizations of events that happen while no attempt is made, according to him, to construct a law under which irregular events fall. In fact, this is the attempt I make with the incorporation of irregular events, as *ceteris paribus* clauses, into the laws themselves.

Redefining laws of nature as laws of the System

Having argued that laws of nature are constituted by common course of nature and *ceteris paribus* clauses, I will further demonstrate why there is also the need to redefine laws of nature as laws of the System. The System describes the wider system under which two or more systems co-interact. By being redefined as a law of the System, a law of nature expands to include any possible interventions by non-physical beings which are

part of the supernatural system, such as God. When God, for example, acts on a law of nature, Its actions do not take place in the physical system, nor in the supernatural system, but in a wider system (i.e. the System) which includes both the supernatural and the physical systems. Similar to cases in which there are physical counter-instances to the common course of nature, it is also the case that God can take the part of the *ceteris paribus* clause in a law of a system.

As Everitt (1987) argues, the law of nature ‘All As are Bs’ must also be reformulated as ‘All As are Bs unless God intervenes to make an A that is not a B’ (p. 348). This is done in order to accommodate for God’s possible interventions in the common course of nature. A law of nature, I argue, cannot remain a law of nature if any non-physical being, in this case, God, can exert its influence on the law. Thus, when God acts in the System there is nothing for It to violate as laws of nature have been redefined as laws of the System which include, as part of their *ceteris paribus* clauses, the exact conditions and circumstances under which God acts. The ‘miraculous’ event, then, is one that is necessarily allowed and one that is within the scope of the law of the System. As McKinnon (1967) argues, ‘by definition, the actual course of events includes [...] the actual course of every event’ (p. 312). Any event then, however unusual it might be, and regardless of whether it is repeatable or not, never takes place outside the wider system to which it belongs. ‘There are no events which are [...] outside [...] nature’, McKinnon further says, ‘because all events are part of nature and [...] their occurrence is necessarily a part of nature’s actual course’ (p. 312). However, I argue, McKinnon’s case should expand to apply to the System in order to also apply to cases in which non-physical beings, such as God, interact with the physical system. The important point to make here is that there is never outside intervention to the System for the System is where all actions take place.

Moreover, referring to the ‘fish tank’ example, as given by C. S. Lewis (1947), will help clarify the reason why the supernatural and the physical systems need to be treated under

one system. Lewis asserts the existence of a fish tank which functions mostly autonomously, but which can be influenced by events, such as a bomb explosion, whose causal source lies outside the tank and which causally affect events inside the tank. The tank and the outside world, then, according to Lewis, are not to be taken as two isolated systems but as two systems which have a 'relation [of] a much larger reality that includes both the tank and the bomb' (p. 60). 'You must replace both Nature and the miracle in a larger context' (p. 60), Lewis continues. This larger context, which Lewis mentions, is the System into which both the tank and the outside world belong. Since the tank and the outside world are not two isolated closed systems and since events which take place in either system can causally affect the other system, it follows that the two systems must be treated under one system in which certain laws exist which apply to both the tank and the outside world.

Corner (2007) considers the 'fish tank' case as analogous to cases in which there are interactions between the supernatural and the physical systems. These interactions, according to Corner, 'would have to conform to some form of law' which, however, would be 'distinct from natural law' (p. 48). Therefore, the fact that interactions between the supernatural and the physical systems are governed by laws and the fact that these laws are distinct from laws of nature, supports the argument that the interactions need to be explained under laws which apply to a wider system (i.e. the System). Thus, irrespective of whether each system has its own laws, there cannot be a violation of any of the laws of the System in events which include the interaction of both the supernatural and physical systems, as any law applies to the whole system, allowing for no exceptions.

The Top-Down and Bottom-Up approaches

So far, I have argued for the reformulation of laws of nature in order to include both what takes place under the common course of nature, and counter-instances to the common course of nature expressed by *ceteris paribus* clauses. Additionally, I have shown why

laws of nature need to be referred to as laws of the System in order to include all systems that co-interact in the System. Referring to laws of the System and not to laws of nature is, in this case, necessary as it is illogical, I argue, to assert that a law of nature remains a law of nature if God, a non-physical entity, can act in the system in which the law applies.

Besides describing the interaction between the supernatural and the physical systems, my approach aims to tackle a problem which Corner (2007) mentions, namely that it is difficult to describe how a causal interaction between the supernatural and the physical systems takes place if the two systems are radically different from each other.

Therefore, I will propose two ways in which the interaction between the supernatural and the physical systems can happen and, applying the System approach and by considering common course clauses and *ceteris paribus* clauses as part of laws of the System, I will show that the occurrence of events which violate the laws of the System (i.e. miracles) are, by definition, impossible. An interaction between the supernatural and the physical systems can take place, I argue, through the Top-Down (TD) and Bottom-Up (BU) approaches.

The Top-Down approach

In the Top-Down (TD) approach, I argue, the physical system cannot be directly causally influenced by the supernatural system as events in the physical system have strictly physical causes. Nevertheless, it is possible for God to act in the physical system by Itself acquiring physical properties. This means that God acquires mass, volume, density, solubility, temperature, location, electric charge, and other physical properties, while remaining God. This is necessary for God to be able to influence the physical system in the TD approach and such an entity, Corner (2007) mentions, ‘cannot be a supernatural one’ (p. 47), further pointing out that ‘a supernatural cause cannot possess any physical properties without becoming a natural cause’ (p. 53). It might be helpful for the reader, in order to better understand the approach, to take the nature of God in the TD approach

as analogous to an incarnated form of God (e.g. Jesus) or an entity which possesses God-like powers (e.g. Moses), as depicted in the Bible. God's actions under the TD approach are analogous to actions done by such figures, for example turning water into wine or parting the Red Sea. Through the TD approach, then, God is able to express Itself solely through a physical agent. It is evident, then, that for God to express Itself in physical terms, such as emitting heat or exerting gravitational force, It must be a physical object. Corner, who follows a line similar to my TD approach, does not accept a supernatural notion of causation, as it 'conceive the supernatural in physical terms, with the result that we are no longer conceiving of it as anything distinct in kind from the natural' (p. 47), establishing that, in a system which functions under the TD approach, God cannot be distinguished from the natural if It is to have any causal power within the system.

Collier (1986) advances this point by bringing the first law of thermodynamics into the argument. The first law of thermodynamics states that the total amount of energy in an isolated system remains constant and that energy in that system can neither be created nor destroyed. As Collier argues, God's intervention in the physical system is impossible according to the first law of thermodynamics in case the physical system is isolated but, in case the physical system is not isolated 'either God, or some part of God [...] is physical and thus subject to physical law' (p. 351), thus arguing that it is necessary for God to acquire physical properties in order to be able to influence the physical system. Thus, God's influence on the physical system is unrestricted but always within what is permissible within the physical system. In other words, under the TD approach, God is physically unlimited but systemically limited. God, then, as being physically unlimited within the physical realm, is able to perform all physically possible actions. Hence, if turning water into wine, walking on water, or bringing the dead back to life, are physically possible actions, they constitute actions which God is able to perform.

In the TD approach, then, 'God's action would be no more miraculous than the action of a stray meteorite, wandering in from [an] unknown part of the physical world' (Collier,

1986, p. 351). Under the TD approach, the physical system remains purely physical and God is only able to influence the physical system by acquiring physical properties and acting in the system only through the laws which apply to the system and only through a physical agent.

At this point, I deem necessary to make a clarification regarding my argument that, under the TD approach, God is physically unlimited but systemically limited, in order to clear out a confusion that arises in the arguments of some theorists, such as Aquinas and Larmer, who seem to confound what nature *would not* produce with what nature *could not* produce when left to its own devices. For example, Larmer (1988) defines a miracle as ‘[an] event that never would have occurred except through the [...] action of a rational agent who [...] transcends nature (p. 81). Such an event, however, is permissible in the physical system and is analogous to any other event caused by a physical agent. Hence, there is no reason to assert that the event in question is a violation of any law of the system.

Further, Aquinas (2018) defines a miracle as ‘something [that is] done outside the order of nature’ (p. 493). Based on this definition, Luck (2016) defines ‘outside the order of nature’ as something which is ‘beyond the causal power of nature’, equating this with ‘something that nature cannot cause’ (p. 270). However, there is a difference between the order of nature and what nature cannot cause. Certainly, there are events which lie beyond the order of nature in that they constitute events which nature *would not* produce on its own, but it does not follow that such events are physically impossible – that is, they are not events that nature *could not* produce. Thus, I suggest that, in the TD approach, it is impossible, by definition, for God to produce an event which nature could not produce on its own. God, therefore, as being physically unlimited and systemically limited, is not restricted by the common course that nature would take when left on its own and is thus able to perform an act which nature *would not* produce, but It is not able to perform an act which nature *could not* produce.

Furthermore, realizing what nature *would not* produce helps to further demonstrate how laws of the System under the TD approach include, as previously argued, a common course of nature clause and a *ceteris paribus* clause. Contrary to Aquinas' (2018) arguments, an event which is produced outside the common course of nature is not to be regarded as a miracle, as that event can be incorporated into the law through a *ceteris paribus* clause. It is important to point out that events which nature would not produce when left to its own devices are not restricted to events that only God would cause, but also to events caused by any rational agent, who, contrary to what Larmer (1988) suggests, does not have to 'transcend nature' (p. 81) in order to cause an event that is permissible within the physical realm.

For example, the statement 'nature *would not* be able to produce a fully-functioning watch' describes the common course of nature of a system which functions under the TD approach, but this does not mean that, in that system, producing a fully-functioning watch is impossible – that is, it is not a law of nature that 'nature *could not* be able to produce a fully-functioning watch'. Rather, 'nature *would not* be able to produce a fully-functioning watch' is an incomplete statement. This is because the statement is only a common course of nature clause and, hence, it cannot form a law of nature by itself for no room is left for exceptions to the common course by a rational agent. The possibility, then, of producing a fully-functioning watch is specified by the *ceteris paribus* clause which is added along with the common course of nature clause to form the law of the System. The law of the System, then, becomes 'nature would not be able to produce a fully-functioning watch *unless* a rational agent assembles such and such objects in such and such a way as to produce a fully-functioning watch'.

I argue that the mere fact that a rational agent *could* produce a fully-functioning watch means that nature *also could* produce a fully-functioning watch when left to its own devices, with the right assembly and process of the necessary material. The probability of such an event is infinitesimally small, but non-zero. Thus, given that a fully-

functioning watch is physically possible, there is nothing wrong in asserting that it is something that nature *could* but never *would* bring about. Therefore, as God acts as a rational agent in a system which functions under the TD approach, Its actions are not contrary to any law of the System but only contrary to the common course that the System takes. As Corner (2007) argues, if we are able to set out the conditions under which God causes an object to levitate, this would be ‘an instance of natural explanation’ (p. 61). The miracle believer does not simply need to show that an event is inexplicable, but she must show that it is inexplicable, *in principle*. Thus, God’s actions would be explicable under the TD approach through *ceteris paribus* clauses and would, therefore, not constitute any violation of the laws of nature.

Hughes (1992) gives another example which helps clarify the difference between what nature *would not* and what it *could not* produce on its own, despite the fact that Hughes, I argue, did not rightly distinguish the two terms either, committing the same mistake that Aquinas (2018) and Larmer (2008) have made. Hughes asserts that the instantaneous arrangement of stars to spell out ‘God made us’ would constitute an example of a violation of nature’s laws as, according to Hughes, it is not an event that would be brought about by nature or by any created entity. However, as Pritchard (2011) notes, this example is problematic as we are not in a position to assign probabilities to such events or render them impossible altogether. More importantly, the fact that no created entity could cause such an event, as Hughes argues, does not imply that any law of nature is violated when the event in question happens. Instead, Pritchard further argues, ‘it might be that the event [requires] a being of a power and scope which can never be realized in any created agent, but otherwise this being is still acting within nature in a non-violating way’ (p. 53). Hence, in a system which functions under the TD approach, God can act within the System without violating its laws. Thus, the instantaneous arrangement of stars to spell out ‘God made us’ is an event which nature *would not* bring about on its own, as it is an event which has an infinitesimally small probability of happening but is, nevertheless, an event which is both logically and

physically possible. Therefore, it is not an event which nature *could not* bring about on its own and its possible actualization would not violate any law.

The event Hughes describes is then, under the TD approach, a combination of i) an event which does not fall under the common course of nature (i.e. an event that nature *would not* produce), and ii) God's intervention who, physically unlimited, acts contrary to the common course of nature, producing, thus, the law of the System that "the stars will never form to spell out 'God made us' (common course of nature clause) unless God acquires physical properties and makes the stars spell out 'God made us' (*ceteris paribus* clause)."

The consequence of Aquinas' and Larmer's confusion between the terms *would not* and *could not* is that they have assumed that an event which nature *would not* produce constitutes a violation of a law of nature (i.e. a miracle). What is the case, however, is that when an event which nature *would not* produce happens, the event is merely an exception to the common course of nature. The exception, as said, is expressed in the law of the System by the *ceteris paribus* clause (Ahern, 1977). Under the TD approach, then, allegedly miraculous events by God are given an explanation which does not supersede the physical realm but conforms to the laws of nature which are identical to the laws of the System, as the System can be expressed solely in physical terms.

The Bottom-Up approach

The second way of interaction between the supernatural and the physical systems that I introduce is the Bottom-Up (BU) approach. In the BU approach, the physical system expands to include parts of the supernatural system. In contrast to the TD approach, in which the physical system remains strictly physical even after God's intervention, there is no system in the BU approach which is purely physical but the system which was previously thought to be purely physical is a system which has supernatural properties as well and is thus open for intervention from supernatural entities in the System.

Therefore, as the supernatural and the physical systems belong to one and the same system, a supernatural being can exert its influence onto the System without having to acquire any physical properties, as it is the case in the TD approach. Under the Bottom-Up approach, the supernatural system remains unchanged and God retains Its supernatural properties. What allows the interaction to take place between the two systems is that God does not intervene to the physical system for It is already in the System.

The need to introduce the BU approach comes from the fact that a law which allegedly applies to the physical system cannot remain a law of nature if a non-physical being, such as God, can act under that particular law. As Basinger (1986) argues, ‘events directly caused by God do not, by definition, occur under just that exact set of natural conditions presupposed in any set of natural laws’ (p. 15). Thus, if God acts in the System, not as an entity which acquires physical properties as in the TD approach, but using Its supernatural properties, it is contradictory to argue that a law onto which God acts is purely physical (i.e. a law of nature). The mere fact that a supernatural being can act on that law suggests that the law cannot be treated as a law of nature but as a law of the System, a system which includes both the supernatural and the physical systems. As Levine (1989) argues, if we suppose that laws of nature are incomplete because they do not cover the supernatural system, then the occurrence of an event that is physically impossible would not violate the laws of nature as the event would be within the scope of a wider system of laws, i.e. the laws of the System.

Further demonstrating how a law of the System manifests under the BU approach will help clarify how the physical system merges with the supernatural system by responding to Larmer’s (1992) worries, as expressed above, regarding the application of the first law of thermodynamics into such a system. Larmer introduces a model similar to my BU approach, and asks whether God would break the first law of thermodynamics when acting within the physical system. As McDermid (2008) mentions, one does not have to

suppose that God introduces or creates new matter, or that It alters the energy levels of a system when It acts within that system. Instead, McDermid argues, the first law of thermodynamics ‘can operate globally, on the physical and non-physical together’ (p. 129), as the BU approach requires. However, McDermid further argues, this means that other physical laws, apart from the first law of thermodynamics, will also be required to operate globally (i.e. in the System), and considers this problematic. But I do not see a reason as to why this is problematic if one treats the laws under a system which, as McDermid himself says, includes the physical and the non-physical together. Of course, it is no longer permissible to talk about physical laws, as McDermid continues to do, but of laws which apply to the System (or laws which apply globally, as he expresses the term). In fact, the reformulation of the law to apply to the System simply means, as he points out, that ‘laws [...] encompass more than just the physical universe’ (p. 129-130). Therefore, an important point to make here is that, as all laws apply to the System and set out the circumstances under which an entity in that System can act according to the laws, there is, by definition, no violation of any laws of the System.

At this point, Lewis’ (1947) ‘fish tank’ example can be of aid too in realizing the identical causal nature of entities in the System under the BU approach. As events taking place outside the tank can influence events taking place inside the tank, it is necessary that both the world inside the tank and the world outside the tank must be treated as one system and not as two isolated systems. The fact that the ‘fish tank’ examples concerns two physical systems and not a supernatural and a physical system, as in the TD and BU approaches, is not of concern as i) the example simply aims to establish how an interaction between two systems takes place and, more importantly, ii) it is only *after* we discover that the two systems in the ‘fish tank’ example are able to interact with each other that we are able to deduce that they are both systems which, as a matter of fact, belong to a wider system (i.e. the physical system). Similar to the case concerning the supernatural and the physical systems, the act of merging the two systems is not done prior to observation, but only after. Thus, as the observation of an interaction between

the fish tank and the outside world shows that they both belong to the physical system, observation of an interaction between the supernatural and the physical systems is sufficient to provide evidence that the two systems belong to the System.

Wishing to expand the 'fish tank' example further to apply to the BU approach, let's suppose for a moment that the fish tank is governed by 'laws of water' while the world outside the fish tank is governed by 'laws of the world'. It is clear to me that the fact that an entity which resides in the outside world and is governed by 'laws of the world' can influence the 'laws of water' reveals that both the system which is governed by 'laws of water' and the system which is governed by 'laws of the world' can be treated under a wider physical system in which certain laws apply both to the world inside and outside the fish tank. If the example is treated under the TD approach it would be impossible for an event taking place outside the tank to influence events taking place inside the tank unless an entity which resides outside the tank acquires some 'water properties' which would allow it to influence the 'laws of water' inside the tank. As Corner (2007) notes, 'the interaction between events outside of the fish tank and those within is made possible by the fact that all of the entities involved are of the same sort' (p. 47). Thus, it does not make sense to talk of any violation of the 'laws of water' nor of laws of the physical system in the 'fish tank' example.

The above case is analogous to the supernatural and the physical systems whose assumption of mutual co-interaction shows that they both belong to one system governed by laws which include the circumstances under which an entity in that system can act. However, the fact that the physical system is assessed in isolation to the supernatural system, I argue, makes some to assert that laws of nature have been violated. As Lewis himself noted, though, people 'have mistaken a partial system within reality, namely Nature, for the whole' (p. 60). While he used this as a criticism to the naturalist position, Lewis (1947) was correct in identifying that the System – the whole, in his terms – is only partially assessed, and the supernatural part of it is wholly ignored.

Furthermore, an example Pritchard (2011) and Lowe (1987) discuss, shows how, in the BU approach, laws of the System also accommodate common course of nature clauses and *ceteris paribus* clauses. Pritchard and Lowe consider the case of a table which levitates mid-air, unsupported. They both agree that in case a natural explanation is given for this event (e.g. an anti-gravity device, or the table suddenly becoming weightless), there is no violation of any law taking place, a view which I find convincing. They argue this on the basis that such an event would not violate the law ‘objects fall when unsupported’ but would add, instead, a *ceteris paribus* clause to the law, using one of the possible natural explanations, such that ‘objects fall when unsupported unless an anti-gravity device is used’.

However, a disagreement arises between Pritchard and Lowe when they assume, for the sake of the argument, that there is genuinely no physical explanation for the table levitating mid-air, unsupported. Lowe argues that, in such a case, we would face a genuine miracle as it would be clear that God intervened and caused the table to levitate. Lowe, I argue, commits the mistake that Lewis spots, as discussed above, namely that he only focuses on the natural part of the System, ignoring that the supernatural system is also part of the System, which means that both the supernatural and the physical systems hold equal explanatory power within the System. As Lowe mentions, ‘the intentional action of the Deity might constitute the only possible explanation of [the event’s] occurrence’ (p. 276), a point whose logical possibility was also accepted by Corner (2007), who argued that events may have explanations which ‘are not consistent with the methods of the natural sciences’ (p. 30). Although Pritchard accepts Lowe’s point, he argues that the explanatory value of the Deity causing the event is no different from the explanatory value that physical causes (e.g. an anti-gravity device) would have. If it is discovered that the explanation involves the Deity, then we would simply be saying exactly that, namely that the Deity supports the table, but that would not violate the law in question in any way. Then, it would be shown that the law that ‘objects fall when unsupported’ would not strictly apply to nature and would also need to be reformulated

as the law of the System ‘objects fall when unsupported unless God acts in such and such a way to support the table’.

As with the TD approach, God is not physically limited in the System which functions under the BU approach. However, as Corner (2007) mentions, in such a system ‘there is more than just nature [...] and there are more causes than just natural ones’ (p. 89), further saying, as I argue, that it is permissible for God to employ supernatural means in order to cause events which *would not* happen, but which *could* otherwise happen, in the common course of nature. The conception of the impossibility of miracles would not be possible without redefining laws of nature as laws of the System; a reformulation which is vital in order to understand the duality of the System posed by the BU approach. Referring to laws of nature in a system in which the BU approach applies does not refer to any state of affairs. This is because, as Corner (2007) argues, laws of the System (or trans-domain laws, as he calls them), have to be distinct from laws of nature. In case interactions between the supernatural and the physical systems are subsumable under laws of nature, Corner argues that ‘the supernatural becomes nothing more than an extension of the natural’ (p. 48), which is the situation described in the TD approach.

Conclusion

By defining miracles as violations of the laws of nature, I argued that such violations are impossible. I demonstrated why laws of nature need to be redefined as laws of the System in order to include all systems which co-interact in the System. Further, I showed how each law of the System includes a common course clause which describes what regularly and predictably happens in that system, and *ceteris paribus* clauses which accommodate for exceptions to the common course of nature. I argue that the reformulation of laws of nature as laws of the System is necessary in order to show that arguments put forward by Swinburne and Smart, who argued that miracles are non-repeatable counter-instances to the laws of nature, do not stand. Non-repeatable counter-instances are

incorporated into the law of the System through *ceteris paribus* clauses, further showing that repeatability cannot be used as a criterion for a law-violating event. Additionally, I explained how the confusion of Swinburne and Smart can be attributed to a similar confusion that arises in the arguments of Aquinas and Larmer who do not distinguish between events which nature *would not* produce and events which nature *could not* produce, mistakenly taking events which nature would not produce as violations of the laws of nature. I demonstrated why this is not the case as such events are possible within the System, in both the Top-Down and Bottom-Up approaches. Further, I explained how the argument that laws of nature need to be reformulated as laws of the System, as well as the argument that laws of the System are constituted by common course of nature clauses and *ceteris paribus* clauses, apply to both the Top-Down and Bottom-Up approaches. In these approaches, the conditions under which God acts into the System are included in the laws of the System and, therefore, it is impossible, by definition, for God to violate any law of the System, as there is never outside intervention to the System for the System is where all actions take place.

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